

**AMENDMENTS TO THE CLAIMS**

*This listing will replace all prior versions, and listings, of claims in the application:*

1. (Currently amended) An i[[I]]ntramedullary nail suitable for insertion in a fractured elongate bone, comprising:  
a stem extending between a proximal end and a distal end,  
the nail comprising a plurality of shape-memory elements realised with which are made of  
at least a shape-memory material, and  
a plurality of seats formed in the stem for housing said shape-memory elements, and in that  
wherein said shape-memory elements are suitable to take assume a first configuration of  
rest in which said shape-memory elements are arranged inside shape wherein they are retractably  
housed in the respective seats and a second configuration of use in which said shape-memory  
elements project from the nail, shape wherein they project from the respective seats,  
wherein said shape-memory elements are structurally independent from the stem, and  
wherein the stem comprises at least two half-cylinders that are axially united along the  
length.
2. (Currently amended) [[I]]The intramedullary nail according to claim 1, wherein  
the seats of the stem are made consist of a plurality of transversal slots, or elongate holes, which  
extends passing from one side of the stem to the other side of the stem.
3. (Currently amended) [[I]]The intramedullary nail according to claim 1, wherein it  
the nail comprises inserts, structurally independent from the stem, and comprising at least one of  
said shape-memory elements, each of said inserts being suitable for insertion in a corresponding  
seat.
4. (Currently amended) [[I]]The intramedullary nail according to claim 3, wherein  
each insert is inserted by pressure in the respective seat.

U.S. Patent Appln. No. 10/599,502  
Amendment  
Reply to Office Action dated March 7, 2011

Docket No. 7202-124 (194359)

5. (Currently amended) [[I]]The intramedullary nail according to claim 3, wherein each of said inserts comprises two shape-memory elements, which are connected by means of a central connection element.

6. (Currently amended) [[I]]The intramedullary nail according to claim 5, wherein each insert has a substantially fork-like shape.

7. (Currently amended) [[I]]The intramedullary nail according to claim [[2]]6, wherein each fork-like insert is suitable to be housed in a corresponding transversal slot, so in such a manner that the two elements are arranged on side project from opposite to sides of the stem.

8. (Currently amended) [[I]]The intramedullary nail according to claim 3, wherein the inserts are flanked in succession along the length of the stem.

9. (Currently amended) [[I]]The intramedullary nail according to claim 3, wherein the inserts are distributed on the side surface of the stem in correspondence with the proximal end and the distal end.

10. (Currently amended) [[I]]The intramedullary nail according to claim 3, wherein the inserts are offset with respect to each other of by 90° sexagesimal.

11. (Currently amended) [[I]]The intramedullary nail according to claim 5, wherein the two shape-memory elements of each insert comprise two opposite tabs[[,]] having a flexural memory.

12. (Currently amended) [[I]]The intramedullary nail according to claim 3, wherein the each insert[[s]] is of the multilaminar, having type, i.e. it is realised by means of a plurality of overlapped foils of shape-memory material.

13. (Currently amended) [[I]]The intramedullary nail according to claim 5, wherein the two shape-memory elements of the insert are connected by means of a cylindrical sleeve.

14. (Currently amended) [[I]]The intramedullary nail according to claim 13, wherein on said cylindrical sleeve two opposite grooves are provided on said cylindrical sleeve, said two opposite grooves being offset by substantially of a right angle 90° with respect to said two shape-memory elements and suitable to house at least partially the elements of a flanked cylindrical sleeve.

15. (Currently amended) [[I]]The intramedullary nail according to claim 11, wherein the tabs on the surface facing face outwards from the stem and have a substantially sawtooth-like profile.

16. (Currently amended) [[I]]An intramedullary nail suitable for insertion in a fractured elongate bone, comprising:

a stem extending between a proximal end and a distal end,

a plurality of shape-memory elements realised with at least a which at least include a shape-memory material, and

a plurality of seats formed in the stem for housing said shape-memory elements,

wherein said shape-memory elements are suitable to take assume a first shape wherein they rest configuration in which said shape-memory elements are retractably housed in arranged inside the respective seats and a second use configuration in which said shape-memory elements shape wherein they project from the respective seats,

wherein the nail includes inserts, structurally independent from the stem and comprising at least one of said shape-memory elements, each of said inserts being suitable for insertion to be arranged in a corresponding seat, and

wherein each insert includes is made of a plurality of overlapped metallic foils made by stacked onto each other and consisting of shape-memory material.

17. (Currently amended) [[I]]The intramedullary nail according to claim 16, wherein each insert has a substantially fork-like shape[[d]].

18. (Currently amended) [[I]]The intramedullary nail according to claim 17, wherein for ensuring a stable assembly of the metallic foils, the insert is provided with metallic foils are held together by a pair of blocking pins inserted transversally to the metallic foils.

19. (Currently amended) [[I]]An intramedullary nail suitable for insertion in a fractured elongate bone, comprising:

a stem extending between a proximal end and a distal end,

a plurality of shape-memory elements realised with which are made of at least a shape-memory material, and

a plurality of seats formed in the stem for housing said shape-memory elements, wherein said shape-memory elements are suitable to take assume a first shape wherein they configuration of rest in which said shape-memory elements are retractably housed in arranged inside the respective seats and a second shape wherein they configuration of use in which said shape-memory elements project from the respective seats,

wherein said shape-memory elements are structurally independent from the stem,

wherein it the nail comprises a tubular jacket for sheathing the stem, the tubular jacket having a side wall which sheathes the stem and has the function of retaining the shape-memory elements in the first shape, i.e. in the close retractable position in the seats, when the nail is inserted in the bone configuration of rest, the jacket comprising a side wall and a plurality of transversal elongate holes made on the side wall, wherein the jacket and the stem can be shifted with respect to each other along a longitudinal axis of the stem from a first operative position in which the side wall of the jacket retains the shape-memory elements in the first configuration of rest, and a second operative position in which the transversal holes of the jacket are aligned with the seats of the stem, so as to allow the arrangement of the shape-memory elements projecting from the respective seats, and

wherein a control screw, suitable to be rigidly connected to a head portion of the stem,  
causes an axial shift of the stem with respect to the jacket, when the control screw is rotated around  
its own axis.

20-23. (Cancelled)

24. (Currently amended) [[I]]The intramedullary nail according to claim [[23]]19,  
wherein it the nail comprises an internally hollow tube suitable to be rigidly connected to a head  
portion of the jacket and wherein in which the control screw is blacklash-like housed within the  
hollow tube with clearance.

25-37. (Cancelled)

38. (New) The intramedullary nail according to claim 24, wherein the internally hollow  
tube is inserted in a bearing sleeve, said bearing sleeve being configured to maintain the jacket  
axially firm during the shift of the stem.

39. (New) The intramedullary nail according to claim 38, wherein a cylindrical body is  
welded on the head portion of the jacket, said cylindrical body having an internal threading onto  
which a corresponding threading of the internally hollow tube is screwed, and wherein the  
cylindrical body is provided with a pair of recesses configured to receive corresponding teeth of  
the bearing sleeve.

40. (New) The intramedullary nail according to claim 19, wherein the head portion of the  
stem is provided with a threaded portion suitable to engage a corresponding threaded portion of the  
control screw.